

AN INTERLEAVED VCO WITH BODY VOLTAGE FREQUENCY RANGE
CONTROL

ABSTRACT OF THE DISCLOSURE

An interleaved VCO is configured using a ring oscillator with voltage controlled feedforward inverting stages coupled around the inverting stages making up the basic ring oscillator to enable the frequency of the ring oscillator to be voltage controlled. The feedforward inverting stages comprise a complementary inverter stage and a voltage controlled transfer gate. Complementary control voltages are coupled to the gates of the complementary transfer gate FET devices. Likewise, the complementary control voltages are coupled to the corresponding body of the FET devices in the transfer gate and in the inverting stage. The complementary control voltages may also be connected to the body of the complementary FET devices in the inverting stages making up the basic ring oscillator. This allows the frequency range of the VCO to be extended without having to switch the feedforward paths into an out of the circuit.